Project B-209

GARDEN AND LAWN HAND TOOLS

A Manufacturing Opportunity in Georgia

Prepared for

The Georgia Department of Industry and Trade
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by

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Foreword

This report is the thirteenth in the series currently in preparation for the Department of Industry and Trade. Other analyses in process focus on wood furniture and paint.

As with many of the products studied as manufacturing opportunities in Georgia during the past six years, a prime attraction for garden and lawn hand tool manufacturers is a large and increasing southeastern market. At the same time, freight and production cost savings can be realized in the Southeast.

Questions or comments on the study are invited. More detailed local data will be supplied to individual companies in confidence on request.

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Summary

Georgia offers three primary advantages as a location for a garden and lawn hand tool plant:

1. Low production labor costs which could provide savings amounting to between 4.5% and 10.5% of the value of the product. (Profit before taxes in the industry is around 15% of sales value.)
2. Low freight costs over a market area extending from west Texas to the Atlantic. The savings in freight costs to customers over shipments from present plant locations range up to 4.7% of product value for truckload shipments.
3. Production in the Southeast of all materials required for the manufacture of garden and lawn tools except alloy steel.

Garden and lawn tool production is now concentrated in Illinois, Ohio, New York, Pennsylvania, and Massachusetts. There is a noteworthy absence of production in Georgia and the remainder of the Southeast.

U. S. shipments of garden and lawn hand tools amounted to $53.8 million in 1958, and the general trend of shipments is increasing. Sales in the freight advantage area for a Georgia plant (Map 1) are estimated to have increased from between $10.1 million and $11.9 million in 1958 to a total of between $11.8 million and $13.9 million in 1961.

The southern market for garden and lawn hand tools represents between 19% and 22% of the national market. More significant is the fact that sales in the region in 1961 were approximately seven times the annual output of an average-size plant in the industry.

INTRODUCTION

The purpose of this study is to point out the advantages of establishing a Georgia plant to serve the large and growing southern market for garden and lawn hand tools, which presently is being supplied mainly from plants in northeastern states.

Garden and lawn hand tool manufacture falls largely into the industrial category classified by the Office of Statistical Standards as "hand and edge tools," which is coded as Standard Industrial Classification (SIC) 3423.[1/] The products discussed in this report include agricultural edged hand tools, which are part of the "edge tools" industry (SIC 34232), and the three segments of the "files, rasps, and file accessories and other hand tools" classification (SIC 34233) which include shovels and other scooping equipment, sledges and other heavy forged tools, and such steel goods as forks and rakes. Power hedge trimmers and shears, however, are part of SIC 35228 (farm machinery), and wheelbarrows are part of SIC 37992 (other transportation equipment).

1/ Standard Industrial Classification Manual, Executive Office of the President, Bureau of the Budget, Office of Statistical Standards, 1957.

THE ADVANTAGES OF A GEORGIA LOCATION

The basic advantages which Georgia offers a producer of garden and lawn hand tools are low production labor costs, low freight costs to customers in the southern freight advantage area, and local production of materials required for manufacture.

Production Labor Costs

Production labor costs range from 21% to 27% of the value of shipments of lawn and garden tools, according to the 1958 Census of Manufactures. Since production labor costs, which represent a large portion of the value of the finished product, vary greatly in different sections of the U. S., they are a primary consideration in choosing a location for a new plant.

A comparison of average production wage rates for major producing states and Georgia is given in Table 1. Since Georgia has no manufacturers of hand and edge tools (SIC 3423), of which lawn and garden tool manufacture is a part, it was necessary in Table 1 to compare rates in the larger industry group, fabricated metal products (SIC 34), which includes the manufacture of all non-power hand tools. This comparison should give a valid comparison of wage differentials between Georgia and other states in the production of lawn and garden hand tools.

Table 1

AVERAGE PRODUCTION WAGE RATES FOR METAL FABRICATION, 1961

Producing State	Average Hourly Wage Rates
California	$ 2.76
Ohio	2.60
Pennsylvania	2.59
New Jersey	2.57
Illinois	2.55
Connecticut	2.34
Massachusetts	2.25
New York	2.20
GEORGIA	1.78

Source: U. S. Bureau of the Census, Annual Survey of Manufactures.

Of the major producing states listed in Table 1, New York currently has the lowest hourly wage rates in the fabricated metal products industry. Even New York's rates, however, are 42 cents per hour higher than in Georgia, while rates in California exceed those in Georgia by almost a dollar an hour.

The importance of these wage differentials can be appreciated when the differences in yearly labor costs of plants with the same output volume are compared. For an average-size plant producing lawn and garden tools the differences between annual production labor costs in Georgia and those in other states are indicated in Table 2.

Table 2

ESTIMATED ANNUAL SAVINGS IN PRODUCTION LABOR COST OF A GEORGIA LOCATION FOR AN AVERAGE-SIZE GARDEN AND LAWN TOOL PLANT OVER OTHER LOCATIONS

Plant Location	Savings of Georgia Plant
California	$ 168,000
Ohio	140,000
Pennsylvania	139,000
New Jersey	135,000
Illinois	132,000
Connecticut	96,000
Massachusetts	80,000
New York	72,000

Notes: An average-size plant is estimated from census data to ship $1.6 million worth of goods annually.

The method of computing the savings of a Georgia plant is indicated in Appendix 1.

The savings in labor costs which could be realized in a Georgia location amount to from 4.5% to 10.5% of the value of the product. Since profit before taxes for the industry averages around 15% of sales value, it would be significantly increased by the above savings in labor costs.

Freight Costs

Since garden and lawn tools generally have a fairly low value per pound (ranging from about 23 cents to 50 cents), the freight costs on shipments over long distances add considerably to the delivered cost. Freight costs are important from the manufacturer's viewpoint because they determine the geographic size of the market area which he can serve competitively from a given plant.

Map 1 indicates the approximate freight advantage area which a Georgia plant could serve economically -- based on freight costs from Atlanta, Georgia; Chicago, Illinois; Saybrook, Ohio; and New York, N. Y.[1/] The freight costs per pound from average-size plants in these cities to dealers in the area are given in Table 3.

Table 3

MOTOR FREIGHT COSTS ON TRUCKLOAD SHIPMENTS OF GARDEN AND LAWN TOOLS FROM AVERAGE-SIZE PLANTS IN ATLANTA AND MAJOR PRODUCING CITIES TO CITIES IN FREIGHT ADVANTAGE AREA

(in cents per pound)

TO:	FROM:			
	ATLANTA GA.	Chicago Ill.	New York N. Y.	Saybrook O.
ATLANTA, GA.	.15	1.82	2.01	1.89
Birmingham, Ala.	.81	1.70	2.16	1.89
Charlotte, N. C.	1.00	1.98	1.63	1.82
Jacksonville, Fla.	1.10	2.25	2.13	2.28
Miami, Fla.	1.58	2.70	2.57	2.72
Memphis, Tenn.	1.22	1.47	2.38	1.89
New Orleans, La.	1.33	2.04	2.60	2.35

Note: Costs are based on a minimum shipment weight of 24,000 pounds.

The table reveals that the freight savings on truckload shipments from an Atlanta plant would be as indicated in Table 4.

1/ The freight advantage area is the area in which a Georgia plant could deliver the product at lower freight costs than major competing plants.

MAP 1

APPROXIMATE FREIGHT ADVANTAGE AREA FOR A GEORGIA GARDEN TOOL PLANT

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Table 4

MOTOR FREIGHT SAVINGS ON TRUCKLOAD SHIPMENTS OF GARDEN AND LAWN TOOLS FROM AN ATLANTA PLANT SERVING THE SOUTHEAST

On Shipments To:	Freight Savings (cents per pound)	Savings As Per Cent of Product Value
Atlanta, Ga.	1.67 to 1.86	4.2 to 4.7
Birmingham, Ala.	.89 to 1.35	2.2 to 3.4
Charlotte, N. C.	.63 to .98	1.6 to 2.5
Jacksonville, Fla.	1.03 to 1.18	2.6 to 3.0
Miami, Fla.	.99 to 1.14	2.5 to 2.9
Memphis, Tenn.	.25 to 1.16	.6 to 2.9
New Orleans, La.	.71 to 1.27	1.8 to 3.2

Note: Savings percentages are based on an average value for garden and lawn tools of 40 cents per pound. Appendix 2 indicates the calculated individual average values per pound for various products in the industry.

Although these freight savings to customers are significant, the savings on shipments in less-than-carload lots would be much greater than those indicated.

The logical market area for a Georgia plant actually would be larger than the area indicated in Map 1 because lower operating costs (primarily labor costs) would allow a Georgia producer to ship the goods outside the freight advantage area at a lower delivered cost than those of present producers.

Materials Required for Production

The materials consumed in volume in the production of hand and edge tools are as follows:

Carbon steel bars and bar shapes

Carbon steel sheet and strip

Carbon steel wire and wire products

Alloy steel (except stainless) bars and other shapes and forms

Aluminum and aluminum alloy sheet, plate, and foil

Iron and aluminum castings

Materials produced in the Southeast are indicated in Table 5. The only material necessary for lawn and garden tool production which is not produced in the region is alloy steel shapes and forms. According to the 1958 Census of Manufactures, alloy steel consumption by the entire hand and edge tool industry, of which the subject tools are a part, amounts to only 2.3% of industry shipments. Therefore, the additional freight expense of importing alloy steel into Georgia would not appreciably affect the cost of the material.

Table 5

GARDEN AND LAWN TOOL MATERIALS PRODUCED IN THE SOUTHEAST

Material	Plant Location
Steel	
Steel plates (sheared and universal)	Alabama, Kentucky
Hot rolled sheets	Alabama, Kentucky
Hot rolled strip	Alabama, Georgia, Tennessee
Hot rolled bars (light shapes, concrete reinforcing, and other)	Alabama, Georgia, Tennessee
Wire rods	Alabama, Georgia
Blooms and billets (foreign or export)	Kentucky
Cold finished bars	Alabama
Cold rolled and galvanized sheets	Alabama, Kentucky
Cold rolled strip	None in Southeast (nearest in Ohio)
Galvanized strip	Georgia
Stainless Steel	
Sheets, plates, strips, coils	None in Southeast (nearest in Ohio)
Billets and bars	Kentucky
Copper	
Continuous roll formed shapes	Kentucky
Spun and extruded parts	Alabama
Aluminum	
Extrusions	Alabama, Florida, Georgia, North Carolina, South Carolina
Wire and rods	Alabama, South Carolina, Tennessee
Sheets	Alabama, Tennessee
Plates	Tennessee
Foil	Tennessee
Castings	
Three or more required alloys	Alabama, Georgia, Tennessee
Iron and Steel Forgings	
Closed die drop forgings	Alabama, Georgia
Steel forgings	Georgia, Tennessee

CONCENTRATION OF PRESENT PRODUCTION

The great bulk of garden and lawn tool production is now concentrated in Illinois, Ohio, New York, Pennsylvania, and Massachusetts. Map 2 gives a comparison of the value added by manufacture in the major producing states.

A breakdown of 1958 U. S. shipments from major producing states by state of origin and by type of product is given in Table 6.

Table 6

U. S. SHIPMENTS OF EDGE AND OTHER HAND TOOLS FROM MAJOR PRODUCING STATES, 1958

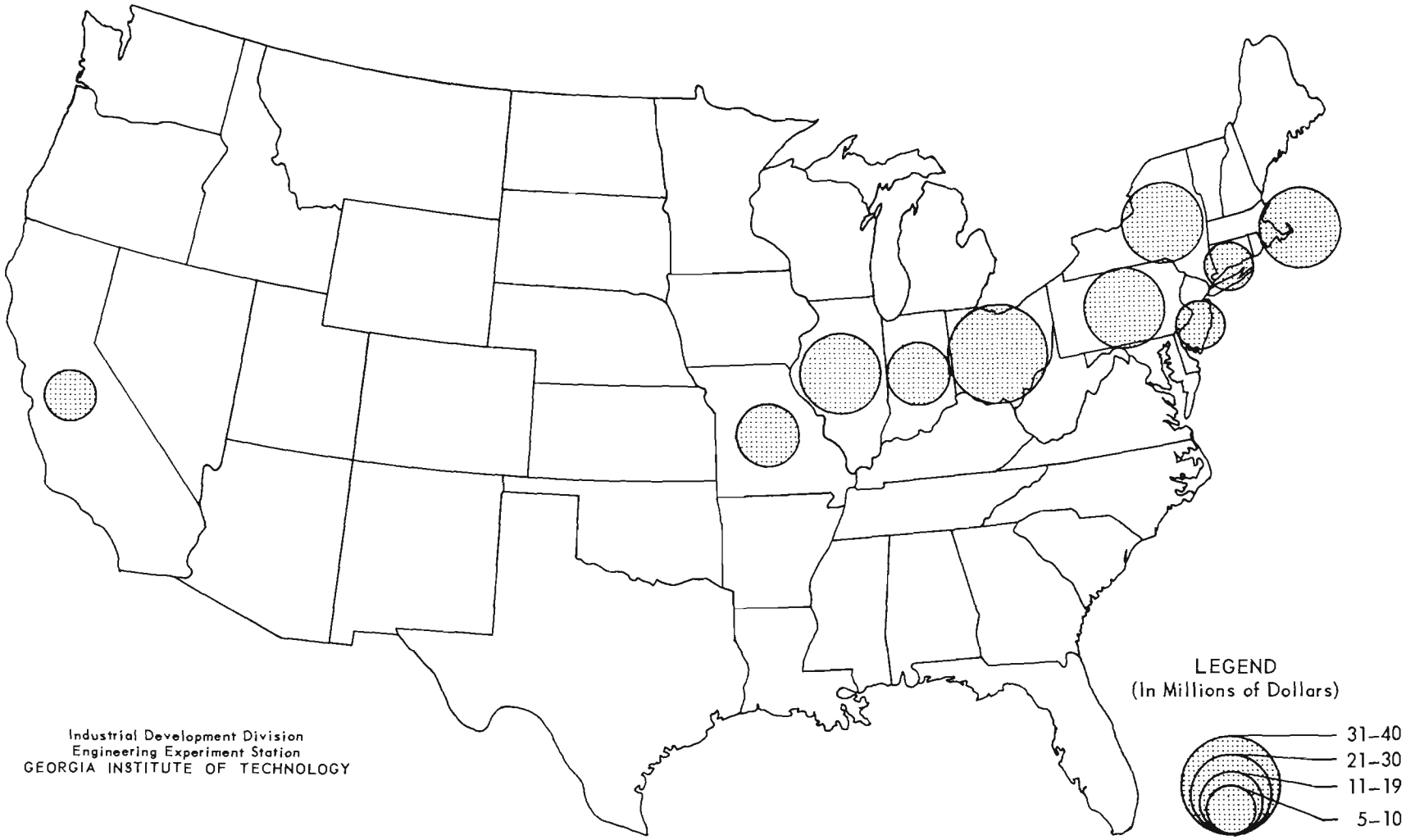
State of Origin	Per Cent of Total U. S. Shipments	
	Edge Tools	Other Hand Tools
California	-	2.5
Connecticut	9.8	-
Illinois	14.8	9.0
Indiana	-	8.8
Iowa	-	1.8
Massachusetts	23.6	1.3
Missouri	1.9	1.0
New Jersey	2.6	4.6
New York	8.4	12.2
Ohio	9.0	21.2
Pennsylvania	5.9	11.5

Source: 1958 Census of Manufactures

An examination of Map 2 and Table 6 indicates a noteworthy absence of production in Georgia and the remainder of the Southeast.

MAP 2

VALUE ADDED BY MANUFACTURE IN PRODUCTION OF EDGE AND OTHER HAND TOOLS
IN MAJOR PRODUCING STATES, 1958



THE MARKET

National Market

U. S. shipments of garden and lawn hand tools amounted to $53.8 million in 1958. A breakdown of these shipments by products is given in Table 7.

Table 7

U. S. MANUFACTURERS' SHIPMENTS OF GARDEN AND LAWN TOOLS, 1958

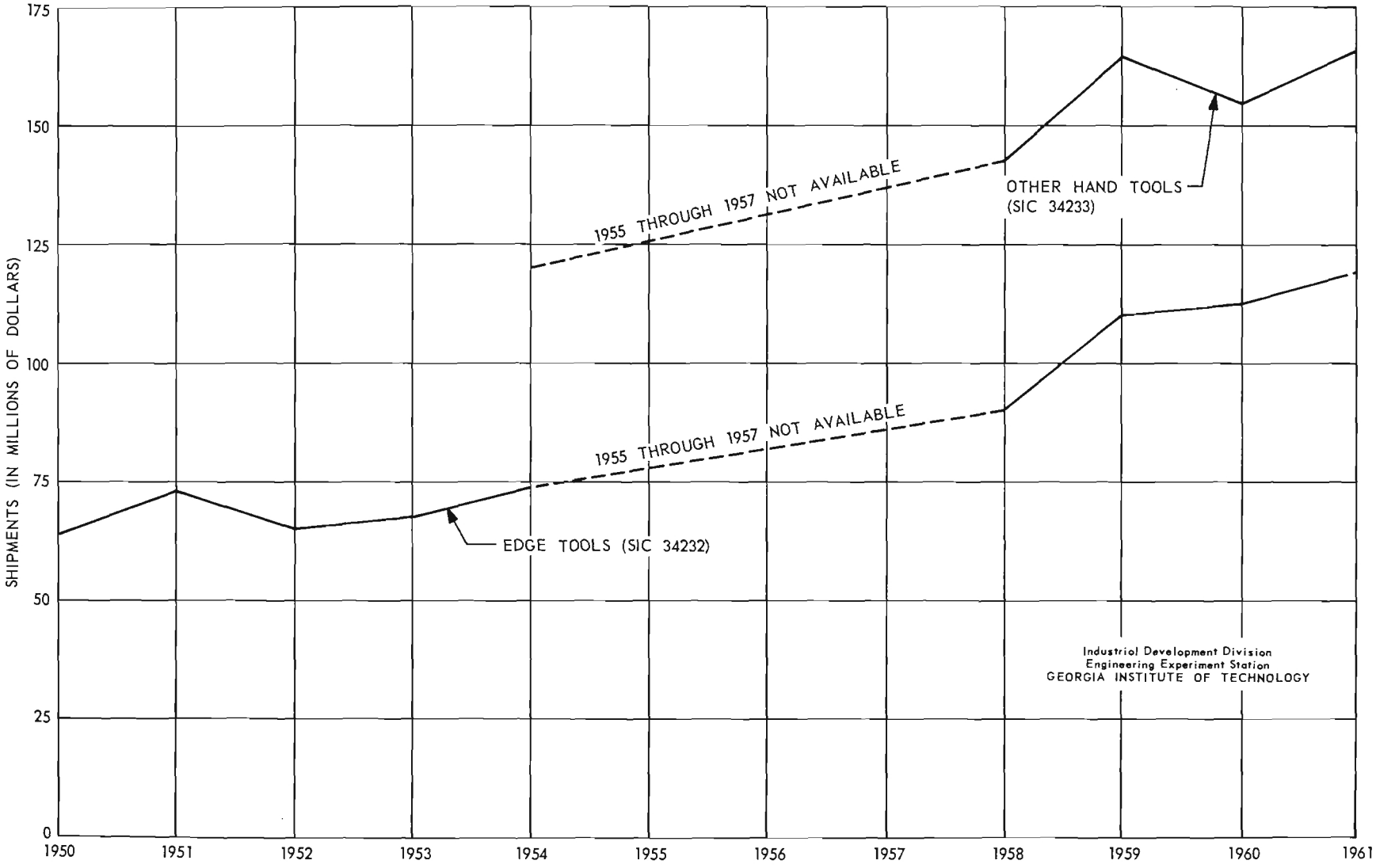
Product	Value of Shipments (in thousands of dollars)
Edge tools (part of SIC 34232):	
Scythes, sickles, grass hooks, machetes, and similar tools	2,647
Other hand tools (part of SIC 34233):	
Shovels, spades, scoops, spoons, scrapers	18,839
Heavy forged tools (sledges, picks, mattocks, and mauls)	3,464
Steel goods (forks, rakes, weeders)	19,433
Other equipment:	
Wheelbarrows (part of SIC 37992)	6,642
Power hedge trimmers and shears (part of SIC 35228)	2,813
Total	53,838

Source: 1958 U. S. Census of Manufactures

An examination of Table 7 reveals that approximately 82% of the shipments are in industries 34232 and 34233. The growths of these industries through 1961 are indicated in Figure 1. Although sufficient data are not available to compute a statistical trend, it is apparent that the general trend of shipments is increasing. Shipments in SIC 34232 increased 81% in the period from 1952 to 1961, while shipments in SIC 34233 increased 38% in the period from 1954 to 1961 (period in which data are available).

FIGURE 1

TREND OF U.S. SHIPMENTS OF EDGE AND OTHER HAND TOOLS



Although imports of some of the lower priced items have increased in recent years, they amount to less than 2% of U. S. manufacturers' shipments and exports exceed imports at the present time.[1/]

Southern Market

The approximate freight advantage area for a Georgia plant is indicated in Map 1. This is the nominal logical market area for a Georgia plant in competition with major producers of garden and lawn tools in Illinois, Ohio, Pennsylvania, and New York.

Sales of lawn and garden tools in the nominal market area in 1958 are estimated to have been between $10.1 million and $11.9 million.[2/] They are estimated to have increased approximately 17% by 1961, to an estimated total of between $11.8 million and $13.9 million. This southern market is quite large -- between 19% and 22% of the national market. It also appears large when compared with an average-size plant's yearly shipments of between $1.6 million and $2.0 million.

1/ See U. S. Imports of Merchandise for Consumption, Report FT-110, 1962, and U. S. Exports of Domestic and Foreign Merchandise, Report FT-410, 1962, published by U. S. Bureau of the Census.

2/ See Appendix 3 for computation of estimate.

CONCLUSION

The southern market for garden and lawn hand tools is sufficiently large to justify the establishment of plants in the region to serve the market. Sales in the region in 1961 were approximately seven times the annual output of an average-size plant in the industry.

Georgia offers many advantages as a location for one or more of these plants. The principal advantages are savings in labor and freight costs, which could amount to as much as 15.2% of the sales value of the products, thus making it possible for a Georgia producer to double the average profit rate of existing manufacturers in northeastern states and California.

APPENDICES

Appendix 1

METHOD OF COMPUTING SAVINGS IN PRODUCTION LABOR COST OF A GEORGIA PLANT

Formula:

Annual Savings = Wage differential per man-hour X Yearly man-hours expended to produce $1.6 million in shipments[1/]

Savings of Georgia Plant over Plant Location in:

California	=	($2.76-$1.78)	X	171,215	=	$167,791
Ohio	=	(2.60- 1.78)	X	171,215	=	140,396
Pennsylvania	=	(2.59- 1.78)	X	171,215	=	138,684
New Jersey	=	(2.57- 1.78)	X	171,215	=	135,260
Illinois	=	(2.55- 1.78)	X	171,215	=	131,835
Connecticut	=	(2.34- 1.78)	X	171,215	=	95,880
Massachusetts	=	(2.25- 1.78)	X	171,215	=	80,471
New York	=	(2.20- 1.78)	X	171,215	=	71,910

1/ According to the 1958 Census of Manufactures, the average shipment value of edge and other hand tools produced per man-hour was $9.345. Therefore, the number of man-hours required to produce the output of an average-size plant ($1.6 million annual shipments) would be 171,215.

Appendix 2

AVERAGE MANUFACTURER'S VALUE PER POUND
FOR GARDEN AND LAWN TOOLS

Garden Tools	Manufacturer's Price	Unit Weight (in lbs.)	Manufacturer's Value per lb.
Trowel	$ .19	.42	$.45
Weeding hoe	.19	.50	.38
Cultivator hoe	.19	.50	.38
Hand rake	.19	.50	.38
T-rake (long handle)	.92	3.10	.30
T-rake (long handle)	1.64	4.50	.36
Broom rake	.53	1.83	.29
Broom rake	1.57	3.17	.50
Cultivator and weeder	.83	1.83	.45
Cultivator	.77	2.00	.39
Hoe	.81	2.25	.36
Hoe	.70	2.33	.30
Spading fork	1.13	4.67	.24
Spading fork	1.17	5.00	.23
Shovel	.86	2.50	.34
Shovel	.88	3.00	.29
Weed cutter	.59	2.42	.24
Plow (cultivator)	5.65	21.00	.27
Edger and trimmer	2.10	3.25	.65
Wheelbarrow	8.25	30.00	.28
Wheelbarrow	8.25	26.00	.32

Source: Catalogs from Manufacturers

Appendix 3

METHOD OF ESTIMATING SALES OF GARDEN AND LAWN HAND TOOLS
IN THE FREIGHT ADVANTAGE AREA

Based on 1958 Retail Sales -- Hardware Stores

Formula:

$$\frac{\text{Area retail sales--hardware stores}}{\text{U. S. retail sales--hardware stores}} \times \text{U. S. sales of garden and lawn tools} = \text{Sales in freight advantage area}$$

Computation:

$$\frac{\$\ 507,771,000}{\$2,717,163,000} \times \$53,838,000 = \$10,062,000$$

Based on 1958 Retail Sales -- Garden Supply Stores

Formula:

$$\frac{\text{Area retail sales--garden supply stores}}{\text{U. S. retail sales--garden supply stores}} \times \text{U. S. sales of garden and lawn tools} = \text{Sales in freight advantage area}$$

Computation:

$$\frac{\$\ 42,365,000}{\$191,039,000} \times \$53,838,000 = \$11,936,000$$

Note: Retail sales totals found in 1958 Census of Business -- Retail Trade.